

# PATENT ABSTRACTS OF JAPAN

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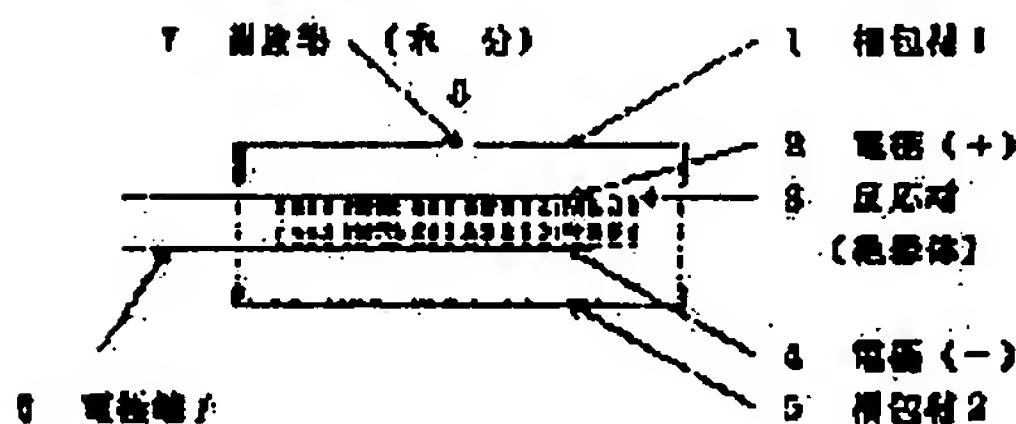
(72)Inventor : TAKAHASHI AKIO

## (54) MOISTURE DETECTING SENSOR FOR DIAPER

(57)Abstract:

**PROBLEM TO BE SOLVED:** To provide a moisture sensor for diaper capable of remarkably improving the burden on nursing of a bedridden patient by automatically rapidly informing a nursing person of a patient's excretion when the patient discharges.

**SOLUTION:** The moisture detecting sensor has a reactive material 3, which is contracted and dissolved in reaction with water, as an insulator between an electrode 2 (+) and an electrode 4 (-), and further a structure for enclosing it by packaging materials 1, 5. When the sensor receives moisture from an opening part 7, the material 3 is reacted, contracted, and dissolved, and the resistance between the electrodes is eliminated, and a switch is electrically operated.



## LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

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[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's  
decision of rejection]

[Date of requesting appeal against  
examiner's decision of rejection]

[Date of extinction of right]

**\* NOTICES \***

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1. This document has been translated by computer. So the translation may not reflect the original precisely.

2. \*\*\*\* shows the word which can not be translated.

3. In the drawings, any words are not translated.

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**CLAIMS**

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[Claim(s)]

[Claim 1] The moisture detection sensor which it was the structure which used the reaction material which is contracted, and is reacted and dissolved in water as an insulating material for inter-electrode [ which was built in the sensor ], inter-electrode electric resistance was lost by reaction material's reacting, and contracting and dissolving when the sensor received moisture, and had the function in which an electric switch changes.

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**DETAILED DESCRIPTION**

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[Detailed Description of the Invention]

[0001]

[The field of the invention on a life] This moisture detection sensor is the structure which reacted to moisture and used as the inter-electrode insulating material the reaction material contracted and dissolved, and is a moisture detection sensor which enabled detection of moisture by the function in which reaction material will react, inter-electrode electric resistance will be lost if a sensor receives moisture, and an electric switch changes. If it equips with this moisture detection sensor in a bedridden patient's diaper, the moisture of an elimination action will be sensed and a switch function will operate. When a report to monitor dace PUREI equipment is attained by taking out this function to the exterior in lighting of an audible tone or a lamp, flashing, and a hospital and a care worker and a nurse have an elimination action at a patient, it can report promptly. It is possible for the check of the existence a patient's elimination action to become possible automatically, and to improve the burden of a care worker or a nurse by leaps and bounds by invention of a moisture detection sensor.

[0002]

[A current situation] The care which a diaper is opened [ the present condition ] and closed at any time all day and night about a bedridden patient, and checks the existence of a patient's elimination action is performed. Occasionally, also when [ that ] \*\*\*\*\* (ing), it is for a long time [ after / elimination ], and a rearrangement is serious. such present condition is very troublesome also for a care worker, and is considerable -- \*\*\*\* -- \*\*\*\* -- it gets down. [ of care ] As for care of Nighttime, in addition to "sufficient sleep cannot be taken" and a corporal burden, time constraint and a mental burden are bending heavily especially. It does not develop, now get down and become precocious

although the support system which supports the burden which is a care worker is called for.

[0003]

[Problem(s) to be Solved by the Invention] While our country greets elderly-people society and elderly people bedridden from now on increase quickly, the age of the side which cares for these is also high, and making the base of the social aid of nursing care for elderly people has been a social technical problem. In the present condition, it is an actual figure that diaper management serves as a care worker's considerable burden. By invention of this moisture detection sensor, management of the existence a patient's elimination action can materialize a possible system easily. The thing [ \*\*\*\*\* (ing) ] is also avoided for a long time [ after / elimination ]. The need of sometimes checking a diaper all day and night is lost it not only realizes sanitary and good care to a patient, but, and lack of sleep and construction of the care system which improves a time feeling of constraint and a mental burden by leaps and bounds in addition to a corporal burden are technical problems.

[0004]

[Means for Solving the Problem] When this invention has an elimination action by equipping with a moisture detection sensor into the diaper of a patient with an advanced disease or bedridden elderly people, a moisture detection sensor detects moisture and the electric switch in a sensor operates. By taking out this function outside, the report to monitor dace PUREI etc. is attained and that the patient had the elimination action makes possible what is automatically notified to a care worker or a nurse promptly in an audible tone, and lighting of a lamp, flashing and a hospital. By invention of a moisture detection sensor, the current care activity which the exact management of a patient's diaper of is attained and sometimes checks a diaper all day and night also becomes unnecessary, a care worker's burden is improved by leaps and bounds, and I realize the time of new care.

## TECHNICAL FIELD

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[The field of the invention on a life] This moisture detection sensor is the structure which reacted to moisture and used as the inter-electrode insulating material the reaction material contracted and dissolved, and is a moisture detection sensor which enabled detection of moisture by the function in which reaction material will react, inter-electrode electric resistance will be lost if a sensor receives moisture, and an electric switch changes. If it equips with this moisture detection sensor in a bedridden patient's diaper, the moisture of an elimination action will be sensed and a switch function will operate. When a report to monitor dace PUREI equipment is attained by taking out this function to the exterior in lighting of an audible tone or a lamp, flashing, and a hospital and a care worker and a nurse have an elimination action at a patient, it can report promptly. It is possible for the check of the existence a patient's elimination action to become possible automatically, and to improve the burden of a care worker or a nurse by leaps and bounds by invention of a moisture detection sensor.

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[0003]

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## TECHNICAL PROBLEM

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[Problem(s) to be Solved by the Invention] While our country greets elderly-people society and elderly people bedridden from now on increase quickly, the age of the side which cares for these is also high, and making the base of the social aid of nursing care for elderly people has been a social technical problem. In the present condition, it is an actual figure that diaper management serves as a care worker's considerable burden. By invention of this moisture detection sensor, management of the existence a patient's elimination action can materialize a possible system easily. The thing [ \*\*\*\*\* (ing) ] is also avoided for a long time [ after / elimination ]. The need of sometimes checking a diaper all day and night is lost it not only realizes sanitary and good care to a patient, but, and lack of sleep and construction of the care system which improves a time feeling of constraint and a mental burden by leaps and bounds in addition to a corporal burden are technical problems.

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## MEANS

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[Means for Solving the Problem] When this invention has an elimination action by equipping with a moisture detection sensor into the diaper of a patient with an advanced disease or bedridden elderly people, a moisture detection sensor detects moisture and the electric switch in a sensor operates. By taking out this function outside, the report to monitor dace PUREI etc. is attained and that the patient had the elimination action makes possible what is automatically notified to a care worker or a nurse promptly in an audible tone, and lighting of a lamp, flashing and a hospital. By invention of a moisture detection sensor, the current care activity which the exact management of a patient's diaper of is attained and sometimes checks a diaper all day and night also becomes unnecessary, a care worker's burden is improved by leaps and bounds, and I realize the time of new care.

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## DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

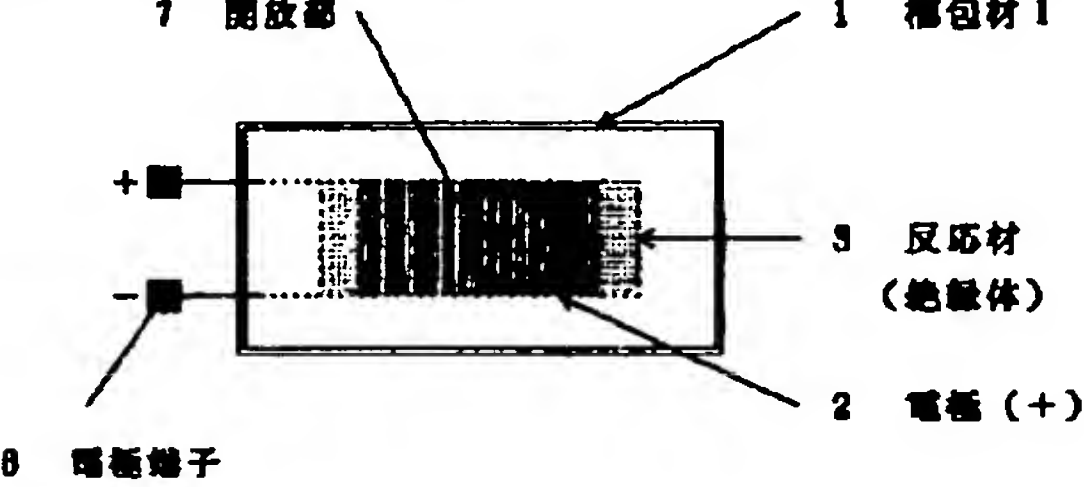
[Drawing 1] Drawing which looked at the moisture detection sensor from the upper part



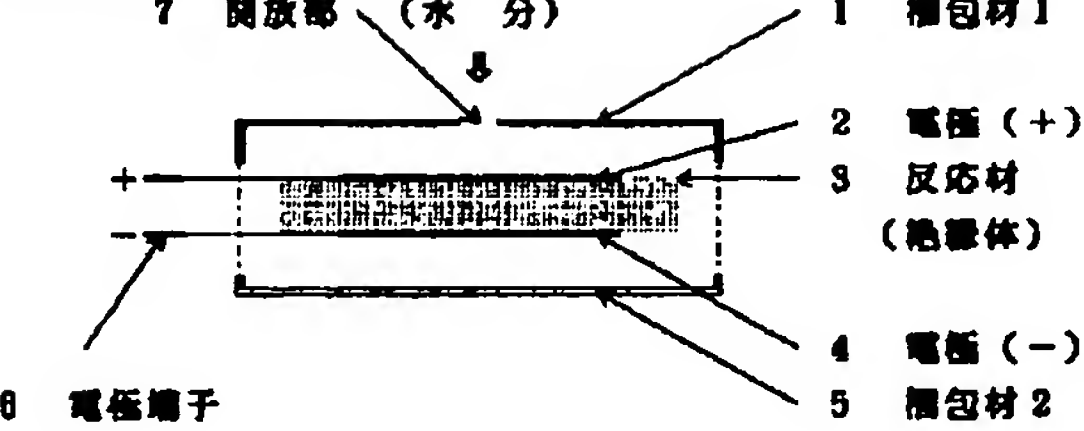
[Drawing 2] The EMEJI sectional view of a moisture detection sensor  
[Explanation of a notation]  
1. Packaging 1 2. Electrode (+) 3. Reaction Material (Insulator)  
4. Electrode (-) 5. Packaging 2 6. Electrode Terminal 7. Disconnection Section

DRAWINGS

[Drawing 1]



[Drawing 2]



[Translation done.]

(51)Int.Cl. <sup>8</sup>	識別記号	序内整理番号	F I	技術表示箇所
G 0 1 N 27/04			G 0 1 N 27/04	B
A 6 1 F 13/42			27/12	G
G 0 1 N 27/12				H
			A 4 1 B 13/02	L
審査請求 未請求 請求項の数1 書面 (全 2 頁)				

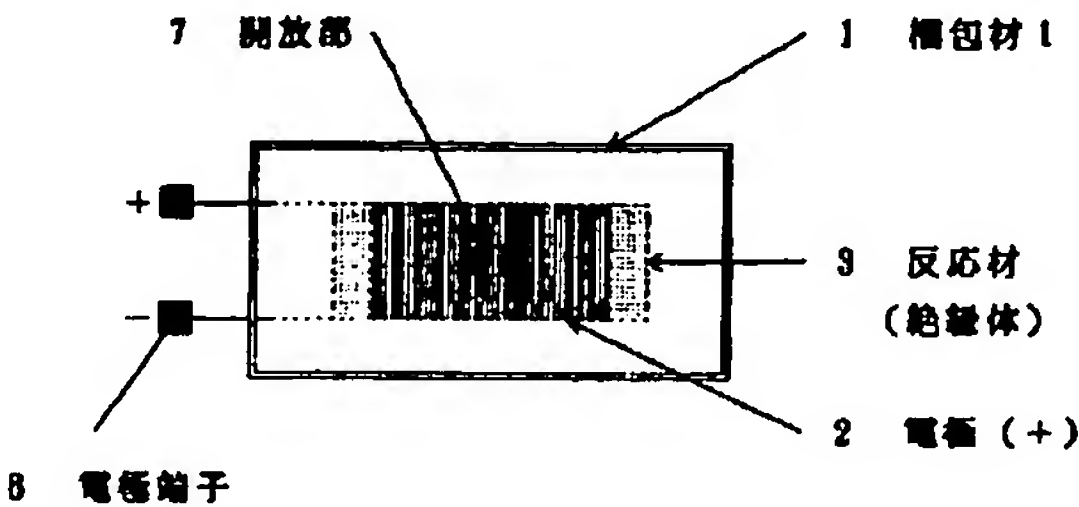
(21)出願番号	特願平7-207280	(71)出願人	595117138 高橋 明生 神奈川県横浜市旭区中沢町80番62号
(22)出願日	平成7年(1995)7月11日	(72)発明者	高橋 明生 神奈川県横浜市旭区中沢町80番62号

(54)【発明の名称】 おむつの水分検出センサー

(57)【要約】 (修正有)

【課題】患者に排泄行為があった場合、自動的に速やかに介護者へ通報する事により、寝たきり患者の介護の負担を飛躍的に改善できるおむつ用水分センサーを提供する。

【解決手段】本水分検出センサーは、水に反応して収縮、溶解する反応材3が、電極2(+)と電極4(-)の間に絶縁体として存在し、さらにこれを、梱包材1と5により包む構造とする。センサーが7の開放部より水分を受けると、反応材が反応して収縮、溶解し、電極間の抵抗が無くなり、電氣的にスイッチが作動する。



## 【特許請求の範囲】

【請求項1】 センサーに内蔵された電極間に、水に反応して収縮、溶解する反応材を絶縁材として使用した構造であり、センサーが水分を受けると反応材が反応して収縮、溶解することによって、電極間の電気抵抗が無くなり、電気的スイッチが切り替わる機能を持った、水分検出センサー。

## 【発明の詳細な説明】

## 【0001】

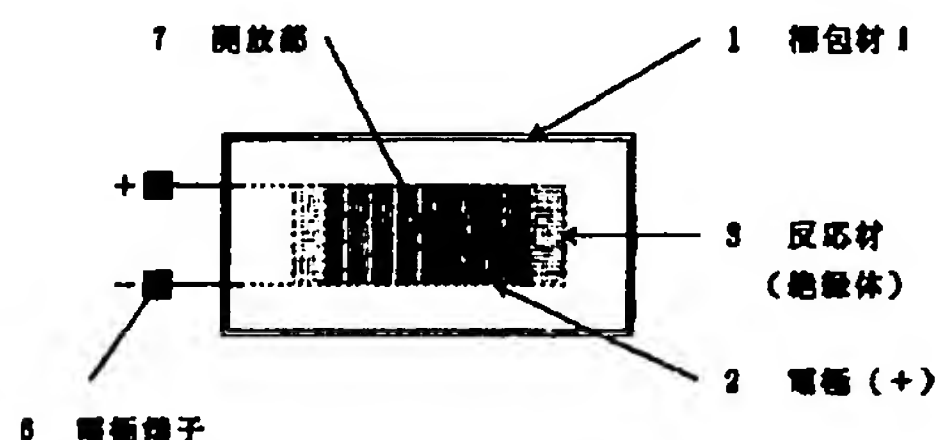
【生活上の利用分野】この水分検出センサーは、水分に反応して収縮、溶解する反応材を電極間の絶縁材とした構造であり、センサーが水分を受けると反応材が反応して電極間の電気抵抗が無くなり、電気的スイッチが切り替わる機能によって、水分の検出を可能とした水分検出センサーである。この水分検出センサーを寝たきり患者のおむつ内に装着すれば、排泄行為の水分を感知してスイッチ機能が作動する。この機能を外部へ取り出す事によりブザー音やランプの点灯、点滅、病院等では監視ディスプレイ装置への通報が可能となり、介護者や看護婦に患者に排泄行為のあった場合、速やかに通報出来ます。水分検出センサーの発明により、患者の排泄行為の有無の確認が自動的に可能となり、介護者や看護婦の負担を飛躍的に改善する事が可能です。

## 【0002】

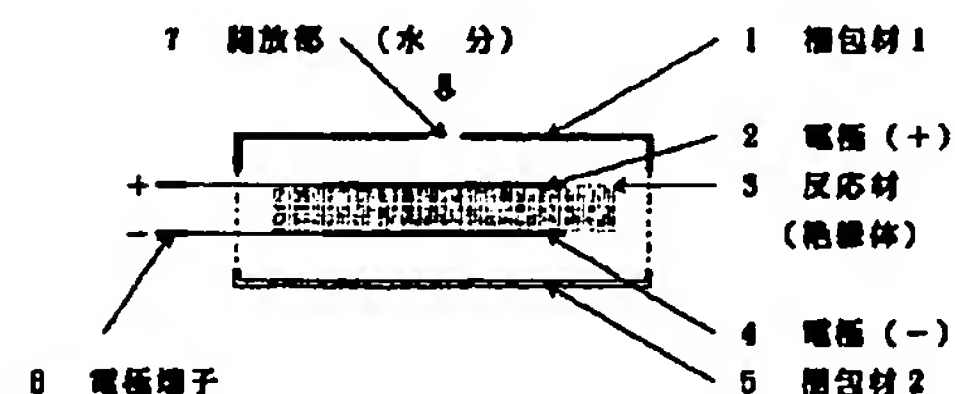
【現在の状況】現状は、寝たきり患者については、昼夜を問わず随時おむつを開閉して患者の排泄行為の有無を点検する介護が行われております。時には、排泄後長時間その儘放置される場合もあり、後始末が大変である。この様な現況は介護者にとっても極めて煩わしい事であり、介護が相当な負担となっております。特に夜間の介護は「十分な睡眠がとれない」、肉体的負担に加え、時間的拘束、精神的負担が重くのしかかっております。介護者の負担を支援するサポートシステムが求められていますが、開発されておりません。

## 【0003】

【図1】



【図2】



【発明が解決しようとする課題】我が国は、高齢者社会を迎えて、今後寝たきりの高齢者が急速に増大すると共に、これらを介護する側の年令も高くなっており、高齢者介護の社会的支援の基盤作りが社会的課題となっております。現状では、おむつ管理が介護者の相当な負担となっているのが現実の姿です。この水分検出センサーの発明により、患者の排泄行為の有無の管理が容易に可能なシステムが具体化出来ます。排泄後長時間その儘放置される事も回避されます。患者に衛生的で良質の介護を実現するだけでなく、昼夜を問わず時々おむつを点検する必要も無くなり、睡眠不足や、肉体的負担に加え、時間的な拘束感、精神的な負担を飛躍的に改善する介護システムの構築が課題です。

## 【0004】

【課題を解決するための手段】この発明は、重症患者や寝たきり高齢者のおむつの中に水分検出センサーを装着する事により、排泄行為があった時、水分検出センサーが水分を検出してセンサー内の電気的スイッチが作動します。この機能を外部に取り出す事により、ブザー音や、ランプの点灯、点滅、及び、病院等では監視ディスプレイ等への通報が可能となり、患者に排泄行為の有った事が、介護者や看護婦に自動的に速やかに通報されることを可能とするものです。水分検出センサーの発明により、患者のおむつの的確な管理が可能となり、昼夜を問わず、おむつを時々点検する現在の介護作業も不要になり、介護者の負担が飛躍的に改善されて、新しい介護の時代を実現致します。

## 【図面の簡単な説明】

【図1】水分検出センサーを上部より見た図

【図2】水分検出センサーのエメージ断面図

## 【記号の説明】

- |          |          |             |
|----------|----------|-------------|
| 1. 梱包材1  | 2. 電極(+) | 3. 反応材(絶縁体) |
| 4. 電極(-) | 5. 梱包材2  | 6. 電極端子     |
| 7. 開放部   |          |             |